THEORY OF CHANGE METHODOLOGY

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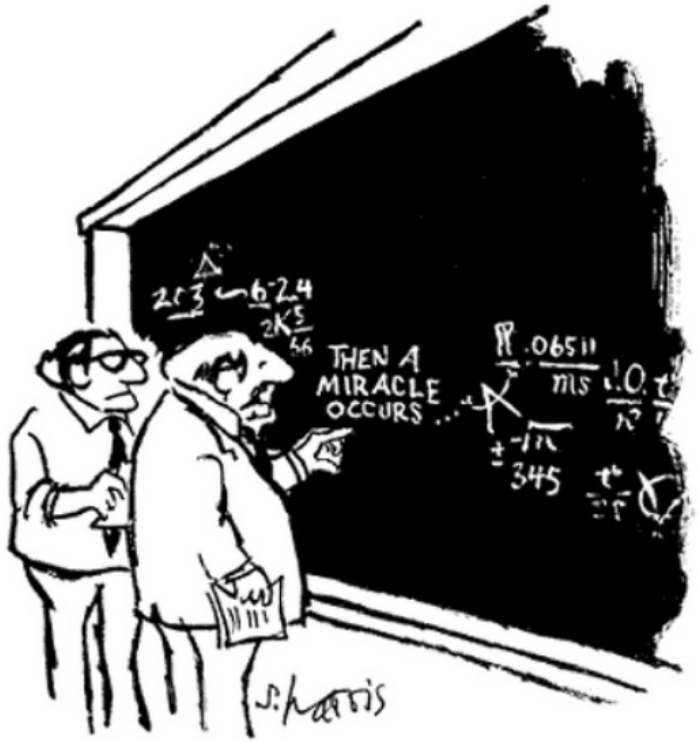
- A theory of change (ToC) is a roadmap of how we believe change happens.
- It explains how an intervention is expected to lead to a specific development change, drawing on a causal analysis based on available evidence.
- A ToC normally includes a diagram and a narrative text

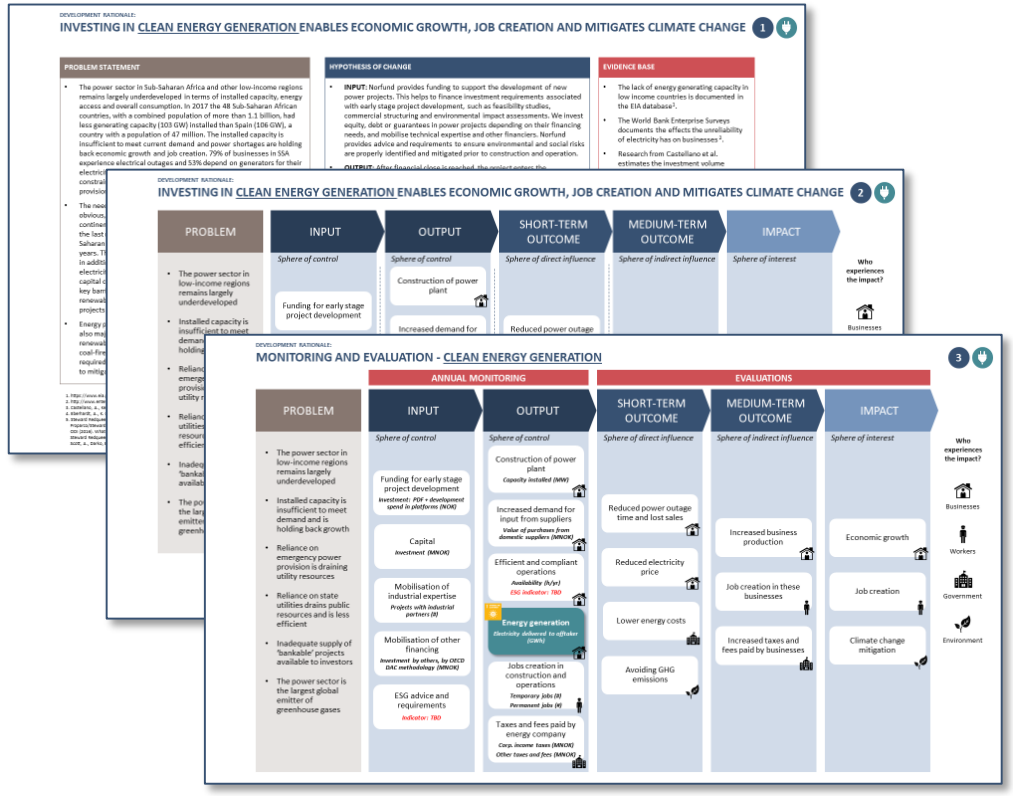


"I think you should be more explicit here in step two."

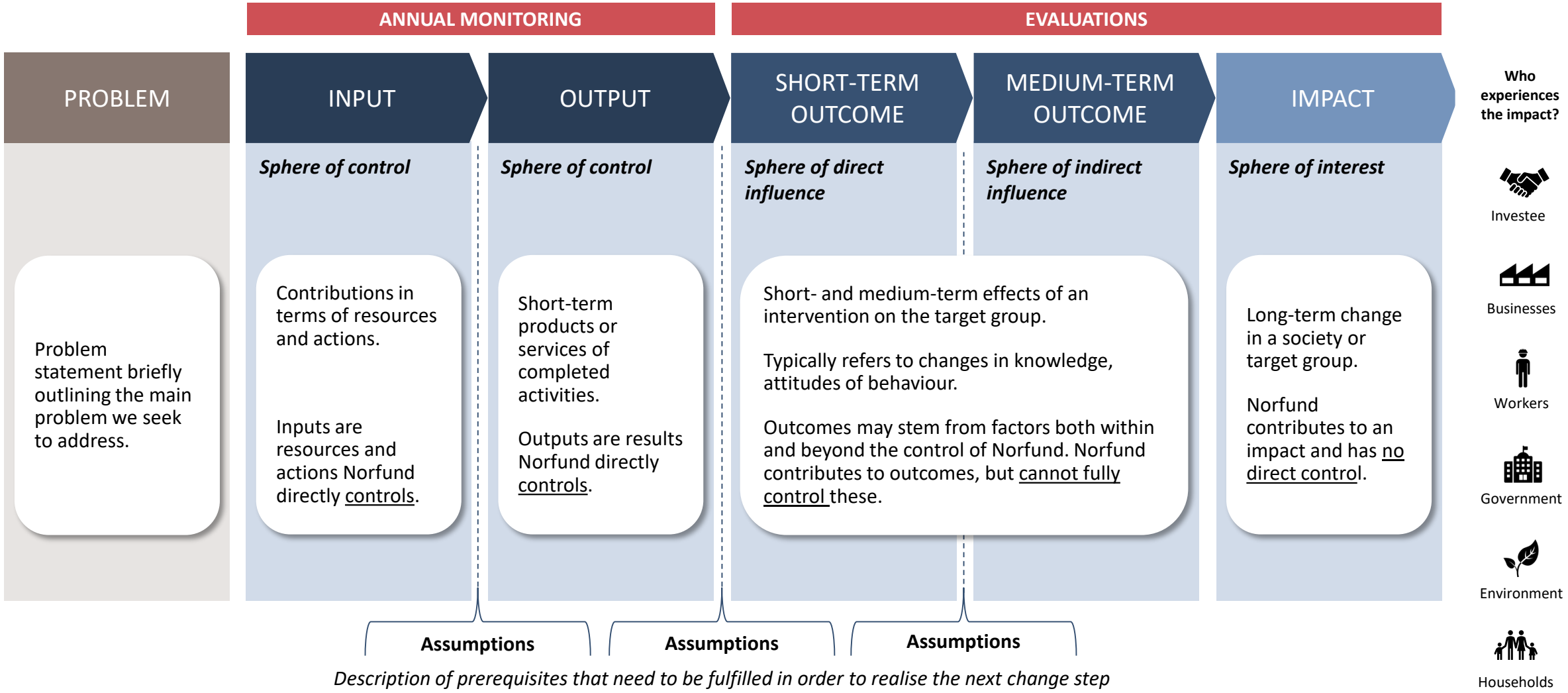
COMPONENTS OF OUR THEORIES OF CHANGE

- Norfund has developed sector specific ToC for energy and financial institutions

- Each ToC consists of three components
  1. Narrative with problem statement, hypothesis of change and assessment of the evidence base
  2. Diagram visualising the causal pathway, with details about intermediary steps
  3. M&E framework, including indicators and means of verification (using existing DE indicators to the extent possible)



THEORY OF CHANGE FRAMEWORK



THEORY OF CHANGE - CLEAN ENERGY

DEVELOPMENT RATIONALE:

INVESTING IN CLEAN ENERGY GENERATION ENABLES ECONOMIC GROWTH, JOB CREATION AND MITIGATES CLIMATE CHANGE

1

PROBLEM STATEMENT

- The power sector in Sub-Saharan Africa and other low-income regions remains largely underdeveloped in terms of installed capacity, energy access and overall consumption. In 2017 the 48 Sub-Saharan African countries, with a combined population of more than 1.1 billion, had less generating capacity (103 GW) installed than Spain (106 GW), a country with a population of 47 million. The installed capacity is insufficient to meet current demand and power shortages are holding back economic growth and job creation. 79% of businesses in SSA experience electrical outages and 53% depend on generators for their electricity need. 40% of businesses cite access to energy as a major constraint to operations. Many utilities rely on expensive peak power provision such as diesel plants to alleviate the situation.
- The need for major investments in power generation capacity is obvious, especially in the face of strong economic growth on the continent, which has been the key driver of electricity demand over the last decade. To meet the estimated demand level in 2040, sub-Saharan Africa will need to build 300 GW of capacity over the next 20 years. This means that more than $490 billion will need to be invested in additional power generation capacity by 2040. However, new clean electricity generation is not expanding quick enough in high risk and capital constrained markets in the absence of DFI support. One of the key barriers to wider deployment and diffusion of clean and renewable energy is inadequate supply of well-prepared, 'bankable' projects available to investors, including Norfund.
- Energy production and consumption are enablers of development, but also major contributors to climate change. The proportion of renewables in the power sector in SSA is still below 50%, and new coal-fired power plants are being built across the continent. The required new capacity should largely come from clean energy sources to mitigate climate change.

HYPOTHESIS OF CHANGE

- **INPUT:** Norfund provides funding to support the development of new power projects. This helps to finance investment requirements associated with early stage project development, such as feasibility studies, commercial structuring and environmental impact assessments. We invest equity, debt or guarantees in power projects depending on their financing needs, and mobilise technical expertise and other financiers. Norfund provides advice and requirements to ensure environmental and social risks are properly identified and mitigated prior to construction and operation.
- **OUTPUT:** After financial close is reached, the project enters the construction phase. This creates temporary construction jobs and demand for goods and services. The expertise and requirements provided help to ensure that the power plant operates with high technical quality and in compliance with the IFC standards. This leads to the generation of clean energy; Norfund's strategic impact objective for the sector. Other direct effects include the creation of jobs in the operations phase, and the payment of taxes and fees to the government.
- **OUTCOME**: The power produced from the additional generating capacity contributes to reducing power outage time and lost sales. Businesses thereby reduce their dependence on more costly back-up solutions. The increased reliability of electricity allows businesses to produce for more hours and at lower costs, leading to increased business output, and increased taxes to the government. The additional production capacity can also reduce the need for expensive peak power provision, thereby saving energy costs. GHG emissions from renewable sources are lower than emissions from fossil fuel powered plants, and production from such sources helps to avoid GHG emissions.
- **IMPACT:** Increased production capacity of one or more industries affects the rest of the economy, leading to economic growth and job creation. Generation of power from renewable sources helps mitigate climate change.

EVIDENCE BASE

- The lack of energy generating capacity in low income countries is documented in the EIA database[1].
- The World Bank Enterprise Surveys documents the effects the unreliability of electricity has on businesses [2].
- Research from Castellano et al. estimates the investment volume needed to meet demand [3].
- A. Eberhardt et al. shows that new electricity capacity is rarely constructed without the participation of development finance institutions [4].
- The relationship between more reliable power generation and economic growth and job creation is documented in evaluations by Steward Redqueen, Olsen and Westergaard-Kabelmann, ODI and A. Scott et al. [5]

1. https://www.eia.gov/
2. http://www.enterprisesurveys.org/
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5. Steward Redqueen (2016). What is the link between power and jobs? http://www.stewardredqueen.com/en/news/in-the-news/in-the-news-item/t/what-is-the-link-between-power-and-jobs/,
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DEVELOPMENT RATIONALE:

INVESTING IN CLEAN ENERGY GENERATION ENABLES ECONOMIC GROWTH, JOB CREATION AND MITIGATES CLIMATE CHANGE

2

PROBLEM

- The power sector in low-income regions remains largely underdeveloped
- Installed capacity is insufficient to meet demand and is holding back growth
- Reliance on emergency power provision is draining utility resources
- Reliance on state utilities drains public resources and is less efficient
- Inadequate supply of 'bankable' projects available to investors
- The power sector is the largest global emitter of greenhouse gases

INPUT

Sphere of control

- Funding for early stage project development
- Capital
- Mobilisation of industrial expertise
- Mobilisation of other financing
- ESG advice and requirements

OUTPUT

Sphere of control

- Construction of power plant
- Increased demand for input from suppliers
- Efficient and compliant operations
- **Energy generation**
- Jobs creation in construction and operations
- Taxes and fees paid by energy company

SHORT-TERM OUTCOME

Sphere of direct influence

- Reduced power outage time and lost sales
- Reduced electricity price
- Lower energy costs
- Avoiding GHG emissions

MEDIUM-TERM OUTCOME

Sphere of indirect influence

- Increased business production
- Job creation in these businesses
- Increased taxes and fees paid by businesses

IMPACT

Sphere of interest

- Economic growth
- Job creation
- Climate change mitigation

Who experiences the impact?

- Investee
- Businesses
- Workers
- Government
- Environment

Assumptions

- Com. and fin. arrangements in place
- Broad community support
- Offtaker honours obligations
- Stable pol. and sec. situation

Assumptions

- Transmission line exists
- Grid can absorb power
- Production replaces power generated by fossil fuels

Assumptions

- Environment is conducive to business growth
- Demand growth facilitated

DEVELOPMENT RATIONALE:

MONITORING AND EVALUATION - CLEAN ENERGY GENERATION

3

ANNUAL MONITORING | **EVALUATIONS**

PROBLEM

- The power sector in low-income regions remains largely underdeveloped
- Installed capacity is insufficient to meet demand and is holding back growth
- Reliance on emergency power provision is draining utility resources
- Reliance on state utilities drains public resources and is less efficient
- Inadequate supply of 'bankable' projects available to investors
- The power sector is the largest global emitter of greenhouse gases

INPUT

Sphere of control

Funding for early stage project development
Investment: PDF + development spend in platforms (NOK)

Capital
Investment (MNOK)

Mobilisation of industrial expertise
Projects with industrial partners (#)

Mobilisation of other financing
Investment by others, by OECD DAC methodology (MNOK)

ESG advice and requirements

OUTPUT

Sphere of control

Construction of power plant
Capacity installed (MW)

Increased demand for input from suppliers
Value of purchases from domestic suppliers (MNOK)

Efficient and compliant operations
Availability (h/yr)

Energy generation
Electricity delivered to offtaker (GWh)

Jobs creation in construction and operations
Temporary jobs (#)
Permanent jobs (#)

Taxes and fees paid by energy company
Corp. income taxes (MNOK)
Other taxes and fees (MNOK)

SHORT-TERM OUTCOME

Sphere of direct influence

Reduced power outage time and lost sales

Reduced electricity price

Lower energy costs

Avoiding GHG emissions

MEDIUM-TERM OUTCOME

Sphere of indirect influence

Increased business production

Job creation in these businesses

Increased taxes and fees paid by businesses

IMPACT

Sphere of interest

Economic growth

Job creation

Climate change mitigation

Who experiences the impact?

- Investee
- Businesses
- Workers
- Government
- Environment

THEORY OF CHANGE – FINANCIAL INSTITUTIONS

DEVELOPMENT RATIONALE:

INVESTING IN FINANCIAL INSTITUTIONS ENABLES ECONOMIC GROWTH, JOB CREATION AND IMPROVES LIVING STANDARDS

1

PROBLEM STATEMENT

- The financial sector in low-income regions remains underdeveloped in terms of depth, inclusion and relevance of product offering. Financial inclusion is critical to support growth and job creation and reduce poverty and vulnerability. Inclusive financial systems provide individuals and firms with greater access to resources to meet their financial needs, such as capitalising on business opportunities, investing in home construction or education and confronting shocks. However, most low- and middle income countries are characterised by low levels of financial inclusion (the proportion of firms and individuals that use financial services). Only 21% of firms in SSA have a bank loan/line of credit, and 39% of businesses in SSA identifies access to finance as a major constraint to business growth. Across developing countries it is estimated that 65 million formal MSMEs in developing countries have unmet financing needs. While 44% of the adult population in low and middle income countries borrowed money last year, only 15% used a financial institution as a source of the financing needed.
- The relevance of the financial products provided is another challenge. Most of the funding offered by financial institutions in low- and middle-income countries is short-term. This makes clients more exposed to rollover and interest rate risks, and discourages longer-term fixed investments. The lack of access to and availability of appropriate financial products is holding back growth, job creation and poverty reduction.
- The need for investments in financial institutions is clear. The potential demand for MSME finance in low- and middle income economies is estimated at USD 8.9 trillion, compared to the current credit supply of USD 3.7 trillion. The financial institutions in developing markets often find it challenging to enter and operate in the MSME market. This is caused both by lack of capital, as well as the high risks and costs associated with servicing these markets. Private investment in financial institutions in low- and middle-income countries is hindered by the high risk level of these markets. Most countries are rated below investment grade and in addition has high reputation risk for investors related to anti-money laundering, corruption and other environmental and social issues.

HYPOTHESIS OF CHANGE

- **INPUT**: Norfund invests equity or debt in the financial institution. In some cases we also mobilise financing from other investors, and we may use grant funding to support the development of training programmes or systems to help the institution improve in key areas. We provide advice and requirements to strengthen the FI's corporate governance and ensure that it has an appropriate systems in place to identify environmental and social risks. When we hold equity, we participate actively on board level to promote sustainable practices and financial inclusion.
- **OUTPUT**: Provision of equity increases the capital adequacy of the FI, which allows the FI to borrow more and take on more deposits through a multiple effect. Funding from DFIs like Norfund also gives the FI a "stamp of approval" which may attract other investors. All instruments contribute to increase lending to the FIs clients – Norfund's strategic impact objective of the sector. The grant support, ESG requirements and active ownership contributes to better systems and increased capacity. Together with the growing loan book, this contributes to improved financial results and increased taxes to the government. The FI hires more staff to service the increased number of customers.
- **OUTCOME**: The increased availability and lower cost of finance (compared to informal providers) contributes to the formation of new firms and the expansion of existing ones. New jobs are created in both firm categories and the firms increase the taxes and fees they pay to the government. As firms grow, they increase their demand from suppliers, enabling these to grow, hire more people and pay more taxes. Households use loans to increase consumption, investment and confront shocks, contributing to better living standards.
- **IMPACT**: The growth of firms and suppliers affects the rest of the economy, leading to economic growth and job creation.

EVIDENCE BASE

- The level of financial inclusion for firms and individuals is documented by World Bank Enterprise Survey[1], Global Findex database[2] and GFDR 2014[3], while the lack of lack of long-term finance is described in the GFDR 2015[4].
- IFC estimates the potential demand for finance in the MSME Finance Gap report[5].
- Horus finds that DFI support to banks has contributed to reducing maturity mismatches, improved capital adequacy and mobilising domestic deposits, thereby increasing the financial sustainability of banks[6]. The DFI financing enabled banks to increase the provision of long-term loans.
- Levine reviews theoretical and empirical work on the relationship between finance and growth and finds that better functioning financial systems ease the external financing constraints that impede firm and industrial expansion[7]. Similar results are found in a case study of CDC's investment in RBL Bank in India[8].
- Ayyagari et al (2016) investigates the effect of access to finance on job growth in 50,000 firms across 70 developing countries, and finds that increased access to finance results in higher employment growth, especially among micro, small, and medium enterprises[9].

1. http://www.enterprisesurveys.org/
2. Demirgüç-Kunt, Asli, Leora Klapper, Dorothe Singer, Saniya Ansar, and Jake Hess. 2018. The Global Findex Database 2017: Measuring Financial Inclusion and the Fintech Revolution. World Bank: Washington, DC.
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DEVELOPMENT RATIONALE:

INVESTING IN FINANCIAL INSTITUTIONS ENABLES ECONOMIC GROWTH, JOB CREATION AND IMPROVES LIVING STANDARDS

2

PROBLEM

- The financial sector in low-income regions remains underdeveloped
- Financial needs of firms and individuals are not met due to low levels of financial inclusion
- Lack of appropriate products such as long-term finance discourage investments
- High financial and reputation risk discourage investments in local FIs from international investors

INPUT

Sphere of control

- Equity
- Long-term debt
- Mobilisation of other financing
- Grant funding
- ESG advice and requirements
- Active participation on board level

OUTPUT

Sphere of control

- Financial institution can raise more funding from other investors
- Financial institution increases deposits
- Financial institution increases lending to firms and/or individuals
- Financial institution hires more staff
- Financial institution improves systems, capacity and financial results
- Financial institution pays more taxes to the government

SHORT-TERM OUTCOME

Sphere of direct influence

- Entry of new firms and expansion of existing
- High risk clients improves E&S performance
- Jobs are created in new and existing firms
- Taxes paid by new and existing firms
- Increased HH consumption and investment
- Increased HH resilience against shocks

MEDIUM-TERM OUTCOME

Sphere of indirect influence

- Increased demand from firms' suppliers
- Job creation in firms' suppliers
- Increased taxes and fees paid by firms' suppliers

IMPACT

Sphere of interest

- Economic growth
- Job creation
- Improved living standard

Who experiences the impact?

- Investee
- Businesses
- Workers
- Government
- Environment
- Households

Assumptions

- Broad shareholder and management support of strategy
- Local bank regulation supportive
- Technical and personal competence
- Norfund reputation (mob + inv)

Assumptions

- Macroeconomic and political stability
- Condusive business environment
- Client use loan as intended

Assumptions

- New businesses are successful

DEVELOPMENT RATIONALE:

MONITORING AND EVALUATION – FINANCIAL INSTITUTIONS

3

ANNUAL MONITORING

EVALUATIONS

PROBLEM

- The financial sector in low-income regions remains underdeveloped
- Financial needs of firms and individuals are not met due to low levels of financial inclusion
- Lack of appropriate products such as long-term finance discourage investments
- High financial and reputation risk discourage investments in local FIs from international investors

INPUT

Sphere of control

Equity
Investment (MNOK)

Long-term debt
Investment (MNOK)

Mobilisation of other financing
Investment by others, by OECD DAC methodology (MNOK)

Grant funding
Grant investment (MNOK)

ESG advice and requirements

Active participation on board level
# of board seats

OUTPUT

Sphere of control

Financial institution can raise more funding from other investors
Borrowed funds (LCY)

Financial institution increases deposits
Customer deposits (LCY)

Financial institution increases lending
Loans and advances (LCY)

Financial institution hires more staff
Permanent jobs (#)

Financial institution improves systems, capacity and fin.results
RoE
Cost/income ratio

Financial institution pays more taxes to the government
Corp. income taxes (LCY)
Other taxes and fees (LCY)

SHORT-TERM OUTCOME

Sphere of direct influence

Entry of new firms and expansion of existing

High risk clients improves E&S performance

Jobs are created in new and existing firms

Taxes paid by new and existing firms

Increased HH consumption and investment

Increased HH resilience against shocks

MEDIUM-TERM OUTCOME

Sphere of indirect influence

Increased demand from firms' suppliers

Job creation in firms' suppliers

Increased taxes and fees paid by firms' suppliers

IMPACT

Sphere of interest

Economic growth

Job creation

Improved living standard

Who experiences the impact?

Investee

Businesses

Workers

Government

Environment

Households